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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/807,306 | 03/24/2004 | Hiroshi Tanaka | 00862.023511 | 3829 |

5514 7590 03/01/2007

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| EXAMINER | |
|---|---|
| AKANBI, ISIAKA O | |
| ART UNIT | PAPER NUMBER |
| 2886 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 03/01/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/807,306 | TANAKA, HIROSHI | |
| | Examiner | Art Unit | |
| | Isiaka O. Akanbi | 2877 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 November 2006*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *1-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Amendment*

The amendment file 22 November 2006 has been entered into this application. Claims 1-16 are cancelled. Claims 17-32 have been added.

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6949755. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method claims in Patent 755 also provide the means for apparatus (the means claims of 755 provide the limitation of the 10807306). The claims of the applications correspond to each other as follows:

| 10/807306 | 6,949,755 |
|---|---|
| 17 | 1 |
| 18 | 2 |
| 19 | 3 |

| | |
|---|---|
| 20 | 4,5 |
| 21 | 4,5 |
| 22 | 6,7 |
| 23 | 6,7 |
| 24 | 8,11 |
| 25 | 11 |
| 26 | 8 |
| 27 | 9 |
| 28 | 10,11,12 |
| 29 | 7,8 |
| 30 | 11,12,13 |
| 31 | 11,12,13 |
| 32 | 11,12,13 |

The difference between the present application and the Patent 755 is that the present application claimed a unit which selects a second mark different from the target mark as a new target mark based on the position of the first mark and the feature while the patent 755 claimed a unit which detects a position of target mark based on the position of the first mark and the feature, plurality scope configured for sensing first and second image at a plurality of magnification (i.e. low/high). The patent 755 claimed plurality of marks (i.e. second mark) and a scope configured for sensing plurality of images that would anticipate the claims of the present application. Additionally, it would have been obvious to one to have different target mark in a plurality of marks for the purpose distinguishing each individual mark.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (5,249,016).

Claims 17 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka. The reference of Tanaka teaches of apparatus/method for detecting a position of a target mark out of a plurality of marks in a region of an object to obtain a position of the region of

the object, said apparatus comprising: a scope (CU) configured to sense a plurality of images (i.e. first and second image) of the object (WF) and a processor (OE) configured to extract, from plurality of images, position of plurality of marks and a feature of a region outside the marks (a plurality of marks formed so that a target marks is recognized) (i.e. evaluate reliability and identified)) and a unit (CM)(col. 2, line 15-65)(col. 3, line 63-col. 5, line 41)(fig. 1)(col. 10, line 10-37), however the reference of Tanaka is silent regarding a second mark different from the target mark as a new target mark based on the evaluated reliability and the identified first mark, in order to extract a position of the selected second mark from an image sensed by said scope at the second magnification. It would have been obvious to one having ordinary skill in the art at the time of invention to provide a second mark that is different from the target mark as a new target mark based on the position of the first mark and the feature for the purpose of providing alignment precision. Further it would have been obvious to one having ordinary skill in the art at the time of invention to extract a position of the selected second mark from an image sensed by scope at the second (i.e. medium/high) magnification for the purpose of easy viewing of the mark.

As to claims 18-25, Tanaka discloses everything claimed, as applied to claim 17 above, comprising a plurality of marks (WAMR/WAML) formed so that a target marks is recognized (i.e. identified)(col. 2, line 15-65)(col. 3, line 63-col. 5, line 41)(figs. 4,5,7 and 9)(col. 10, line 10-26). The reference of Tanaka is silent regarding the feature corresponds to an auxiliary mark. It would have been obvious to one having ordinary skill in the art at the time of invention to provide extracted features that correspond to an auxiliary mark, which is included in the object and associated with the desired marks for the purpose of providing a more accurate alignment.

As to claims 26-28, Tanaka discloses everything claimed, as applied to claim 17 above, in addition Tanaka discloses wherein the object (w) is a substrate on which a device is to be formed, a stage unit (XYS) which positions the substrate and a unit (CU) which controls positioning of the substrate by said stage unit based on the position of the target mark (fig. 1)(col. 4, line 11-69)(col. 5, line 9-41).

As to claim 29, Tanaka discloses everything claimed, as applied to claim 17 above, in addition Tanaka discloses wherein the object (W) is a first substrate on which a device is to be formed (fig. 1)(col. 5, line 9-41) and teaches plurality of marks formed so that a target mark is recognized as applied above, It would have been obvious to one having ordinary skill in the art at the time of invention to provide a mark corresponding to the second mark that is initially

selected as the target mark with respect to a subsequent substrate in a lot including the first substrate for the purpose of providing a more accurate measurement and alignment.

**Additional Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art apparatus/method which detects a position of a target mark included in an object that may anticipate or obviate the claims of the applicant's invention.

***Response to Arguments***

Applicant's arguments/remarks, see pages 10-13, filed 22 November 2006, with respect to the rejection(s) of claim(s) 1-16 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered but they are not persuasive. In response to Applicant's arguments with respect to cited references '755 that that the feature of the target mark changing, namely, the selection of the second mark as the new target mark in the present invention would not be anticipated by the claims of the '755 patent, the examiner disagrees with the applicant arguments, that the selection of the (i.e. second, third or fourth) from plurality of marks as the new target mark in the present invention would have be anticipated by the claims of the '755 patent for the purpose of providing multiple measurement.

As to applicant arguments that Tanaka patent (5,249,016) does not teach or suggest at least the feature of (i) identification of a first mark based on a first mark feature and (iv) selection of a second mark as a new target mark different from the target mark based on the evaluated reliability and the extracted first mark, in order to extract the selected second mark position from the high magnification image, the examiner disagrees with the applicant arguments, that cited reference discloses a plurality of marks formed so that a target marks is recognized (col. 4, line 11-30). Additionally, in response to applicant's argument that the prior art was not configured "in the manner of the present invention recited in the independent claims", it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed

structural limitations. Ex parte Masham, 2 USPQ 2d 1647 (1987). Further as to applicant arguments that there is no suggestion at least for the feature of selection of a second mark as a new target mark different from the target mark based on the evaluated reliability and the extracted first mark, in order to extract the selected second mark position from the high magnification image, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to provide would have been obvious to one having ordinary skill in the art at the time of invention to extract a position of the selected second mark from an image sensed by scope at the second (i.e. medium/high) magnification for the purpose of easy viewing of the mark.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi
February 7, 2007

LAYLA G. LAUCHMAN
PRIMARY EXAMINER